



BAY AREA RAPID TRANSIT DISTRICT  
800 Madison Street  
Oakland, California 94607  
Telephone 465-4100

## BACKGROUND INFORMATION

### SYSTEM OPERATIONS FACT SHEET

(AUGUST 1975)

#### LINE OPENING DATES

FIRST PHASE	-	FREMONT-MACARTHUR	-	SEPTEMBER 11, 1972
SECOND PHASE	-	FREMONT-RICHMOND	-	JANUARY 29, 1973
THIRD PHASE	-	CONCORD-MACARTHUR	-	MAY 21, 1973
FOURTH PHASE	-	SAN FRANCISCO (MONTGOMERY STREET- DALY CITY)	-	NOVEMBER 5, 1973
FIFTH PHASE	-	TRANSBAY SERVICE	-	SEPTEMBER 16, 1974

#### WEEKDAY TRAIN SCHEDULES

TRAINS ARE DISPATCHED BETWEEN RICHMOND AND FREMONT EVERY 12 MINUTES; BETWEEN FREMONT AND DALY CITY EVERY 12 MINUTES; AND BETWEEN DALY CITY AND CONCORD EVERY 12 MINUTES.

THIS SCHEDULING WILL RESULT IN 6-MINUTE HEADWAYS ON THE SAN FRANCISCO INTRA-CITY LINE THROUGH THE TRANS-BAY TUBE TO THE OAKLAND WEST STATION, IN DOWNTOWN OAKLAND BETWEEN MACARTHUR AND 12TH STREET STATIONS, AND ON THE ALAMEDA LINE BETWEEN LAKE MERRITT AND FREMONT THROUGHOUT THE OPERATING DAY.

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## DIRECT AND TRANSFER ROUTES

FREMONT TO RICHMOND - DIRECT SERVICE

FREMONT TO DALY CITY - DIRECT SERVICE

RICHMOND TO FREMONT - DIRECT SERVICE

RICHMOND TO CONCORD OR DALY CITY - TRANSFER AT MACARTHUR,  
19TH STREET OR 12TH STREET STATIONS

CONCORD TO DALY CITY - DIRECT SERVICE

CONCORD TO RICHMOND OR FREMONT - TRANSFER AT MACARTHUR,  
19TH STREET OR 12TH STREET STATIONS

DALY CITY TO FREMONT - DIRECT SERVICE

DALY CITY TO CONCORD - DIRECT SERVICE

DALY CITY TO RICHMOND - TRANSFER FROM CONCORD BOUND TRAIN AT  
12TH STREET, 19TH STREET OR MACARTHUR STATIONS.

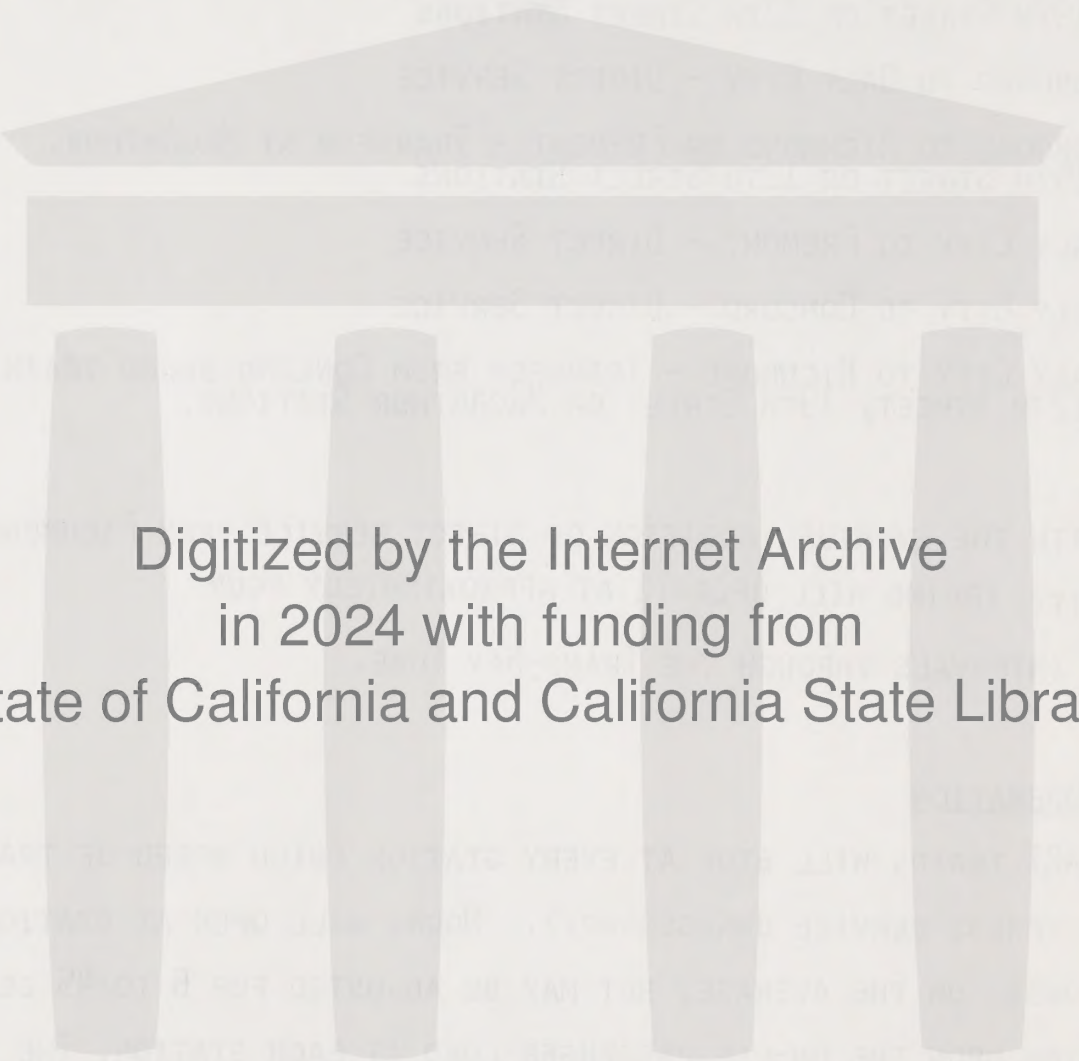
WITH THE EVENTUAL ADDITION OF DIRECT SERVICE FROM RICHMOND TO DALY CITY, TRAINS WILL OPERATE AT APPROXIMATELY FOUR MINUTE INTERVALS THROUGH THE TRANS-BAY TUBE.

## TRAIN OPERATION

BART TRAINS WILL STOP AT EVERY STATION (HIGH SPEED OF TRAINS MAKES EXPRESS SERVICE UNNECESSARY). DOORS WILL OPEN AT STATIONS FOR 20 SECONDS, ON THE AVERAGE, BUT MAY BE ADJUSTED FOR 6 TO 45 SECONDS, DEPENDING UPON THE ON-OFF PASSENGER LOAD AT EACH STATION. THE SYSTEM IS CAPABLE OF CARRYING 21,600 SEATED PASSENGERS PER HOUR IN EACH DIRECTION AT TWO-MINUTE HEADWAYS. STANDEES WOULD ADD TO THIS NUMBER.

## TRAIN MAKE-UP

TRAINS WILL CONSIST OF TWO TO TEN CARS EACH, THE NUMBER OF CARS DEPENDING ON THE NUMBER OF PEOPLE TO BE SERVED AT DIFFERENT TIMES OF



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THE DAY. EVERY TRAIN WILL HAVE TWO "A" CARS (THOSE WITH CONTROL CABS), ONE ON EACH END, AND UP TO EIGHT "B" CARS. TRAIN LENGTHS MAY BE CHANGED AT THE STORAGE YARDS AT RICHMOND, CONCORD OR HAYWARD.

## STRUCTURES

THE BART ALIGNMENT WAS DESIGNED TO FOLLOW ESTABLISHED TRAVEL CORRIDORS. THE SYSTEM INCLUDES 71 MILES OF DOUBLE-TRACK GRADE-SEPARATED RIGHT-OF-WAY -- APPROXIMATELY 25 MILES AT SURFACE OR ON-GRADE CONSTRUCTION, 23 MILES OF AERIAL STRUCTURE, 19 MILES OF UNDERGROUND CONSTRUCTION AND 4 MILES UNDER THE BAY LINKING SAN FRANCISCO WITH OAKLAND.

## STATIONS

THERE ARE 34 STATIONS ON THE LINE -- 17 IN ALAMEDA COUNTY, EIGHT IN SAN FRANCISCO, EIGHT IN CONTRA COSTA COUNTY, AND ONE IN DALY CITY. THERE ARE 13 AERIAL, 14 SUBWAY AND SEVEN AT-GRADE STATIONS. TWENTY-THREE STATIONS HAVE PARKING LOTS WITH A TOTAL INITIAL CAPACITY OF NEARLY 18,000 AUTOMOBILES.

## PRE-PROGRAMMED AUTOMATIC TRAIN OPERATION

THIS INCLUDES (1) A FAILSAFE TRAIN PROTECTION SYSTEM TO ASSURE SAFE SEPARATION OF TRAINS UNDER ALL CONDITIONS; (2) AUTOMATIC SCHEDULE MAINTENANCE AND ADJUSTMENT, AND (3) FULLY AUTOMATIC TRAIN OPERATION UNDER NORMAL CIRCUMSTANCES.

IN THE EVENT THAT THE CENTRAL COMPUTER OR ITS COMMUNICATIONS LINKS SHOULD FAIL, EACH TRAIN WOULD STILL OPERATE SAFELY AND AUTOMATICALLY VIA STATION AND WAYSIDE EQUIPMENT. LOSS OF CENTRAL COMPUTER MONITORING WOULD CAUSE A TEMPORARY SUSPENSION OF AUTOMATIC





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SCHEDULE ADJUSTMENT, BUT AUTOMATIC TRAIN OPERATION WOULD CONTINUE WITH FULL SAFETY.

### SPECIAL TRACKWORK

SPECIAL TRACKWORK AT 21 LOCATIONS PERMITS TURNBACKS OR SINGLE-TRACKING. CROSSOVERS HAVE BEEN SPACED SO THAT 20-MINUTE SERVICE COULD BE MAINTAINED IN EACH DIRECTION BETWEEN ANY TWO CROSSOVERS, USING ONLY ONE TRACK. TRAINS CAN BE OPERATED IN ALTERNATIVE DIRECTIONS UNDER FULLY AUTOMATIC TRAIN CONTROL.

### CAR REPAIR AND STORAGE FACILITIES

CARS WILL BE CLEANED, INSPECTED, REPAIRED, AND STORED IN THE EAST BAY YARDS AND SHOPS. INITIAL AND POTENTIAL YARD CAPACITIES ARE AS FOLLOWS:

RICHMOND YARD:	150-250 CARS
CONCORD YARD:	150-200 CARS
HAYWARD YARD:	160-250 CARS

SHOPS AT THESE THREE LOCATIONS WILL HANDLE ALL NORMAL ROUTINE INSPECTIONS AND MAINTENANCE. THE HAYWARD SHOP WILL PERFORM THOSE TASKS OF SPECIALIZED OVERHAUL, REPAIR, AND TEST NATURE.





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CURRENT COST ESTIMATE

as of 2/28/75

COSTS

Direct Construction Costs	\$ 882,000,000
Design and Construction Management	123,000,000
Utility Relocation by Owners	28,000,000
Land and Land Rights	97,000,000
Rolling Equipment	162,000,000
Insurance	26,000,000
Other Construction Costs	37,000,000
Preliminary Expense, Security and Maintenance	81,000,000
Unallocated TDA Funds	3,000,000
Contingencies	<u>4,000,000</u>
Total Estimated Cost of Basic System (exclusive of Transbay Tube)	\$1,443,000,000
Estimated Cost of Transbay Tube	<u>176,000,000</u>
Total Estimated Cost	\$1,619,000,000

SOURCES OF FUNDS

Proceeds of Sale of General Obligation Bonds	\$ 82,000,000
California Toll Bridge Authority	176,000,000
Proceeds of Sales Tax Revenue	150,000,000
Earnings from Temporary Investments	111,000,000
Transit Development	24,000,000
Miscellaneous Income	51,000,000
Federal Capital Grants	<u>315,000,000</u>
Total	\$1,619,000,000

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